

V. REMARKS

Claims 7 and 13 are objected to because of informalities. The claims are amended to obviate the objection. Withdrawal of the objection is respectfully requested.

Claims 1, 2, 11-13 and 15-16 are rejected under 35 USC 112, first paragraph, for allegedly failing to comply with the enablement requirement. Claim 1 is canceled to obviate the rejection. Withdrawal of the rejection is respectfully requested.

Claims 1-5, 7-10, 12, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as unpatentable over DuMond (U.S. Patent No. 2,133,606) in view of Hirokawa et al. (U.S. Patent No. 5,134,640).

As mentioned above, claim 1 is canceled and claims 2, 3, 7, 10-13, 15 and 16 are amended such that claims 2-5 and 7-16 now depend directly or indirectly from claim 17. Withdrawal of the rejection is respectfully requested.

Claims 1-5, 8, 9, 12, 13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Catlin (U.S. Patent No. 1,997,676) in view of Hirokawa. The Examiner believes that all of the features of these claims are either taught or suggested in the combination of these references.

As mentioned above, claim 1 is now canceled and claims 2, 3, 7, 10-13, 15 and 16 such that claims 2-5 and 7-16 are amended to depend directly or indirectly from claim 17.

Withdrawal of the rejection is respectfully requested.

Claims 1, 2, 8-10, 12, 13 and 14 are rejected under 35 USC 103 (a) as being unpatentable over Carter (U.S. Patent No. 3,737,698) in view of Hirokawa. The rejection is respectfully traversed.

As mentioned above, claim 1 is canceled and claims 2, 3, 7, 10-13, 15 and 16 are amended such that claims 2-5 and 7-16 now depend directly or indirectly from claim 17. Withdrawal of the rejection is respectfully requested.

Claims 1-4, 11, 12 and 16 are rejected under 35 USC 103 (a) as being unpatentable over Price et al. (U.S. Patent No. 6,560,315) in view of Hirokawa. The rejection is respectfully traversed.

As mentioned above, claim 1 is canceled and claims 2, 3, 7, 10-13, 15 and 16 are amended such that claims 2-5 and 7-16 now depend directly or indirectly from claim 17. Withdrawal of the rejection is respectfully requested.

Claim 17 is rejected under 35 USC 103 (a) as being unpatentable over DuMond (U.S. Patent No. 2,133,606) in view of Koshishiba (U.S. Patent No. 5,629,969). The rejection is respectfully traversed.

DuMond teaches an x-ray generating device that includes a continuously bombarded, movable target member of an extended area mounted in such a manner to undergo approximately a circular motion of translation in which any particular portion of the target is exposed to electron bombardment for a short enough period of time so that that portion does not become overheated. Also, that portion is maintained out of exposure to the bombardment for a sufficient time to become cooled through an associated fluid or other cooling means before re-exposure to the bombardment. A dynamically steady cyclic thermal state is established on the face of the target.

Koshishiba discloses an X-ray imaging system that includes an electron gun, an electron optical means, a scanning electron image detection unit, an X-ray image intensifier and an imaging device. The electron gun generates and accelerates an electron beam. The electron optical means focuses the electron beam generated from the electron gun and irradiates the electron beam to a transmission-type target. The transmission-type target is disposed on a prolonged line in an incident direction

of the focused electron beam directed to the transmission-type target. The scanning electron image detection unit deflects the electron beam and detects reflected electrons from the transmission-type target and secondary electrons. The X-ray image intensifier is installed other than on the prolonged line in the incident direction of the electron beam directed to the transmission-type target. The X-ray image intensifier is an image detector for detecting transmitted X-rays. The imaging device is used for imaging an output image of the X-ray image intensifier.

Claim 17, as amended, is directed to an apparatus for generating X-rays by irradiating a target with an electron beam that includes an electron gun operative for emitting electrons; an electron lens having a bore extending therethrough for receiving and converging the emitted electrons; vibration applying means for vibrating the target in directions parallel to a surface thereof with the vibration applying means disposed within the bore and connected to the electron lens; a holder connected to the vibration applying means and operative to hold the target within or adjacent the bore; and a vacuum vessel operative for containing the electron gun, the electron lens, the vibration applying means and the target in a vacuum.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim 17 as amended. Specifically, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests vibration applying means disposed within a bore and connected to an electron lens. Furthermore, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests a holder connected to the vibration applying means and operative to hold the target within or adjacent the bore. Additionally, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests vibration applying means for vibrating the target in directions parallel to a surface thereof.

By contrast, DuMond teaches driving means for producing gyratory movement

of the support arm to cause the axis thereof to describe a cone having its apex at the center of pivot support of the arm and thereby cause the target to undergo approximately a circular motion of translation. With such circular motion, DuMond teaches away from vibrating the target in directions parallel to a surface thereof.

Thus, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine the features of the applied art because such combination would not result in the claimed invention. As a result, it is respectfully submitted that claim 17 is allowable over the applied art.

Withdrawal of the rejection is respectfully requested.

Newly-added claim 18 also includes features not shown in the applied art.

Further, Applicants assert that there are also reasons other than those set forth above why the pending claims are patentable. Applicants hereby reserve the right to submit those other reasons and to argue for the patentability of claims not explicitly addressed herein in future papers.

In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same,

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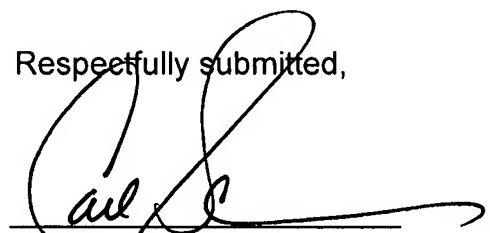
Application No.: 10/516,524

the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

Date: April 27, 2006

By:


Lee Cheng
Reg. No. 40,949

Carl Schaukowitch
Reg. No. 29,211

RADER, FISHMAN & GRAUER PLLC
1233 20th Street, N.W. Suite 501
Washington, D.C. 20036
Tel: (202) 955-3750
Fax: (202) 955-3751
Customer No. 23353

Enclosure(s): Amendment Transmittal
 Petition for Extension of Time (three months)

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